

A software program for use on an embedded computing device includes an operating system layer, an application framework, and a programming environment. the programming environment includes a contention locking scheme for setting light object locks, which are handled in user space, and heavy object locks, which are handled at the system level. The contention locking scheme is configured to set a light object lock on an initially unlocked object when a first thread attempts to lock the object, and to maintain a light lock on the object when a nested intra-thread lock is attempted by the first thread.